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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/799,193	03/12/2004	Hiromitsu Yamaguchi	1232-5326	8180

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EXAMINER	
GOLDBERG, BRIAN J	

ART UNIT	PAPER NUMBER
2861	

DATE MAILED: 11/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/799,193	YAMAGUCHI ET AL.	
	Examiner	Art Unit	
	Brian Goldberg	2861	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 November 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 3-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 3-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/14/06 has been entered.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 6, 8-11, and 13-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Yano et al. (US 6352327).

3. Regarding claim 6, Yano et al. disclose "a print head (5 of Fig 2) having a plurality of arrayed chips (5a-5d of Fig 1, col 14 ln 39-43), the chips each having a plurality of print elements arranged in columns (see Fig 3, N1, Ni, N64) and having a plurality of print elements divided in a number of time-division drive blocks (col 7 ln 54-66), the print elements are equal in number to an integer times the number of time-division drive blocks (col 9 ln 47-54); the print head and a print medium are moved relative to each other in a scan direction that crosses a direction of the columns of the

print elements (A and B of Fig 1); the print elements of each of said drive blocks are activated in the drive blocks on a time-division basis to form an image on the print medium (col 7 ln 54-66); at least two print elements in adjoining chips are aligned in the scan direction forming a set of print elements (see Fig 1 and 6C, col 6 ln 52-61); and the number of sets or pairs of print elements in the adjoining chips aligned in the scan direction is equal to an integer times the number of time-division drive blocks (col 6 ln 61-65, col 7 ln 62-66)."

4. Regarding claim 8, Yano et al. disclose "the plurality of print elements in the print head are arranged in an entire widthwise printable range of the print medium (col 14 ln 32-38)."

5. Regarding claim 9, Yano et al. disclose "the plurality of print elements in the print head are ink jet print elements that can be activated to eject ink from nozzles (col 2 ln 66-67, col 6 ln 4-6)."

6. Regarding claim 10, Yano et al. disclose "the ink jet print elements have electrothermal transducers that generate energy for ejecting ink (col 13 ln 49-53)."

7. Regarding claim 11, Yano et al. disclose "a plurality of arrayed chips (5a-5d of Fig 1), the chips each having a plurality of print elements arranged in columns (see Fig 3, N1, Ni, N64) and having a plurality of print elements arranged in a number of time-division drive blocks (col 7 ln 54-66), the print elements being equal in number to an integer times the number of time-division drive blocks (col 9 ln 47-54); wherein the print head and a print medium are moved relative to each other in a scan direction that crosses a direction of the columns of the print elements (A and B of Fig 1); wherein the

print elements of each of the drive blocks are activated in the drive blocks on a time-division basis to form an image on the print medium (col 7 ln 54-66); wherein at least two print elements in adjoining chips are aligned in the scan direction forming a set of print elements(see Fig 1 and 6C, col 6 ln 52-61); wherein the number of sets of print elements in the adjoining chips aligned in the scan direction is equal to an integer times the number of drive blocks (col 6 ln 61-65, col 7 ln 62-66)."

8. Regarding claim 13, Yano et al. disclose "the plurality of print elements in the print head are arranged in an entire widthwise printable range of the print medium (col 14 ln 32-38)."

9. Regarding claim 14, Yano et al. disclose "the plurality of print elements in the print head are ink jet print elements that can be activated to eject ink from nozzles (col 2 ln 66-67, col 6 ln 4-6)."

10. Regarding claim 15, Yano et al. disclose "the ink jet print elements have electrothermal transducers that generate energy for ejecting ink (col 13 ln 49-53)."

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12. Claims 1, 3-5, 7, 12, 16, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yano et al. in view of Takagi et al. (US 6217149).

13. Regarding claim 1, Yano et al. disclose "moving the print head (5 of Fig 2) and a print medium (1 of Fig 1) relative to each other in the scan direction (A and B of Fig 1) that crosses a direction of the columns of the print elements; and dividing the print elements into the plurality of drive blocks and activating the drive blocks of print elements on a time-division basis to form an image on the print medium (col 7 ln 54-66)." Thus Yano et al. meet the claimed invention except "wherein drive timings with which to activate the set of print elements aligned in the scan direction have the same time-division drive timing."

14. Takagi et al. teach "wherein drive timings with which to activate the set of print elements aligned in the scan direction have the same time-division drive timing (col 8 ln 25-55, Fig 8A)." It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to drive printing elements aligned in the scan direction at the same time. One would have been motivated to so modify Yano et al. for the benefit of forming a plurality of dots that are aligned in the sub-scanning direction using a set of print elements aligned in the scan direction, regardless of the nozzle arrangement, as stated by Takagi et al.

15. Regarding claim 3, Yano et al. further disclose "the plurality of print elements in the print head are arranged in an entire widthwise printable range of the print medium (col 14 ln 32-38)."

16. Regarding claim 4, Yano et al. further disclose "the plurality of print elements in the print head are ink jet print elements that can be activated to eject ink from nozzles (col 2 ln 66-67, col 6 ln 4-6)."

17. Regarding claim 5, Yano et al. further disclose "the ink jet print elements have electrothermal transducers that generate energy for ejecting ink (col 13 ln 49-53)."

18. Regarding claims 7 and 12, Yano et al. disclose the claimed invention as set forth above regarding claims 6 and 11 respectively. Thus Yano et al. meet the claimed invention except "the print elements aligned in the scan direction are allocated to the same drive block for activation."

19. Takagi et al. teach "the print elements aligned in the scan direction are allocated to the same drive block for activation (col 8 ln 25-55, Fig 8A)." It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to drive printing elements aligned in the scan direction at the same time. One would have been motivated to so modify Yano et al. for the benefit of forming a plurality of dots that are aligned in the sub-scanning direction using a set of print elements aligned in the scan direction, regardless of the nozzle arrangement, as stated by Takagi et al.

20. Regarding claim 16, Yano et al. disclose "moving the print head (5 of Fig 2) and a print medium (1 of Fig 1) relative to each other in the scan direction (A and B of Fig 1) that crosses a direction of the columns of the print elements; activating the drive blocks of print elements on a time-division basis to form an image on the print medium (col 7 ln 54-66)." Thus Yano et al. meet the claimed invention except "activating the set of print elements aligned in the scan direction at the same time-division drive timing."

21. Takagi et al. teach "activating the set of print elements aligned in the scan direction at the same time-division drive timing (col 8 ln 25-55, Fig 8A)." It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to

drive printing elements aligned in the scan direction at the same time. One would have been motivated to so modify Yano et al. for the benefit of forming a plurality of dots that are aligned in the sub-scanning direction using a set of print elements aligned in the scan direction, regardless of the nozzle arrangement, as stated by Takagi et al.

22. Regarding claim 17, Yano et al. further disclose "a storage media readable by a computer and storing the program of claim 16 (20b,c of Fig 2, col 6 ln 30-34, col 15 ln 30-37)."

Response to Arguments

23. Applicant's arguments with respect to claims 1-17 have been considered but are moot in view of the new ground(s) of rejection. Yano et al. do disclose that the number of sets of print elements aligned in the scan direction is equal to an integer times the number of drive blocks since Yano et al. disclose four drive blocks for four sets of print elements as cited above.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Goldberg whose telephone number is 571-272-2728. The examiner can normally be reached on Monday through Friday, 9AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on 571-272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Brian Goldberg
AU 2861
November 22, 2006

STEPHEN MEIER
SUPERVISORY PATENT EXAMINER